

PRELIMINARY AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0001] with the following amended paragraph.

[0001] This Application is a continuation in part of pending Application No. 10/339,237, filed January 9, 2003.

Please replace paragraph [0008] with the following amended paragraph.

[0008] The above-mentioned features of the invention will become more clearly understood from the following detailed description of the invention read together with the drawings in which:

Figure 1 is a side view of a prior art safety barrier;

Figure 2 is a perspective side view illustrating one end of the prior art safety barrier of Figure 1;

Figure 3 is a perspective side view illustrating an opposed end of the prior art safety barrier of Figure 1;

Figure 4 is a perspective view of a protection barrier system of the present invention, illustrating one embodiment of a protection barrier;

Figure 5 is a side view of the protection barrier of Figure 4, illustrating one embodiment of the side wall structure of the barrier;

Figure 6 is a top view of the protection barrier of Figure 5, illustrating the relationship of a tongue protrusion and a groove in both ends of the barrier;

Figure 7a is a section view along 7a-7a of Figure 6, illustrating a plurality of wall segments of the side wall surface of one embodiment of the barrier;

Figure 7b is a section view along 7b-7b of Figure 6, illustrating the relationship of a buttress of one embodiment and a plurality of channels on each side wall surface;

Figure 8a is a detailed side view of an upper channel depicted in Figure 7a;

Figure 8b is a detailed side view of a lower channel depicted in Figure 7a;

Figure 9 is a top view of the ends of two barriers nested end-to-end;

Figure 10 is a perspective view of an end connector depicted in Figure 9;

Figure 11 is a top view of one end of a barrier depicted in Figure 4;

Figure 12 is an exploded view of a an alternative embodiment of the barrier depicted in Figure 4;

Figure 13 is a perspective view of one embodiment of protection barriers connectable end-to-end and having a supplemental energy-absorbing system attachable thereto;

Figure 14 is a perspective view of an end connector attached to cables of the supplemental energy-absorbing system depicted in Figure 13;

Figure 15 is an exploded view of the end connector of Figure 14;

Figure 16 is a perspective view of an alternative embodiment of the end connector of Figure 15, and having spring clips positioned to guide the cables of the supplemental energy-absorbing system;

Figure 17 is a perspective view of an additional alternative embodiment of the barrier and end connector of Figure 14, including an end member and a plurality of spring clips positioned to guide the cables of the supplemental energy-absorbing system;

Figure 18 is a perspective view of the barrier and end member of Figure 17, illustrating a plurality of protection barriers connected end-to-end and having the energy-absorbing system attached to each side wall guide channel to channel a vehicle laterally along the length of the side walls of end-to-end nested protection barriers;

Figure 19 is a perspective view of a plurality of nested barriers of the one alternative embodiment of the protection barrier of Figure 4 18

Figure 20 is a perspective view of an additional alternative embodiment of the protection barrier of Figure 4 18, including a plurality of tubes guided by the plurality of spring clips;

Figure 21 is a perspective view of a plurality of like-configured barriers connected in a curved orientation; ~~and~~

Figure 22 is an end view of an additional embodiment of the protection barrier of Figure 7b 17; and

Figure 23 is a perspective view of a spring clip utilized for positioning of cables and/or tubes through respective side wall guide channels of either protection barrier of Figures 16, 17 or 22.

Please replace paragraph [0024] with the following amended paragraph.

[0024] An alternative embodiment for the barrier 12 is illustrated in Figure 17, depicting an alternative barrier 130 having a plurality of non-vertical wall segments 132, 132' disposed along the opposed wall surfaces, but without the plurality of buttresses formed into each side wall surfaces. Each side wall surface includes: a lower base segment 134, a lower angled segment 136, a lower guide channel 138, a middle angled segment 140, a middle sloped segment 142, an upper guide channel 144, and an upper sloped segment 146. The barrier 130 includes opposed wall surfaces without buttresses thereon for use in controlling pedestrians, controlling crowds at public gatherings, for delineating parking areas, and for roadside uses where speeds are typically less than about 35 mph. The barrier 130 can be filled with liquid or granular ballast disposed through an access port 124 (cover not shown), and drained from a drain hole 118 (plug not shown). The barrier 130 can be utilized without ballast therein to provide a light-weight, easily positioned barrier. The barrier 130 includes opposed ends 154, 154' with couplings having a tongue protrusion 156 and a groove 158 that allow either end 154, 154' to be coupled in end-to-end nested configuration with either end 154, 154' of a like-configured barrier 130 (without side wall buttresses), or with either end 54, 54' of barrier 110 (having side wall buttresses). Another alternative barrier includes a barrier configured as illustrated in Figure 12, with two or more side wall buttresses 48a', 48b', 48c', 48d', 48e' on each side 32, 32', but without an upper hole 50 or a lower hole 52 through each buttress. The alternative barrier, lacking upper holes 50 or lower holes 52 in each buttress, is coupled end-to-end with like-configured ends of similar barriers, but without cables or tubes extended through each respective barrier side wall. The alternative barrier is utilized by positioning a plurality of the barriers having side wall buttresses but

lacking holes therein, in coupled end-to-end orientation adjacent and parallel to, either in front of or behind, similar barriers with side wall buttresses, or lacking side wall buttresses thereon, to provide a plurality of barrier layers for impact absorption without cables or tubes extended through the barrier side walls.

Please replace paragraph [0026] with the following amended paragraph.

[0026] An alternative embodiment for an end connector is illustrated in Figure 17, including an end member 106 that is generally hemispherical in shape and is positioned at opposed ends ~~54, 54'~~ 154, 154' of a plurality of end-to-end aligned nested barriers ~~110~~ 130. The end member 106 is composed of polyethylene materials and includes an interior chamber that can be filled with liquid or granular ballast. Each side wall portion of the end member 106 includes a plurality of non-vertical wall segments disposed at heights comparable to the like-configured side walls ~~32, 32'~~ 132, 132' of nested barriers ~~110~~ 130 (see Fig. 17). A ballast fill means includes an access hole 24" and removable plug 26" disposed in the top surface and a drain hole 18" and removable plug 20" are disposed in a lower segment of the outer curved portion 106" of the end member 106. The end member 106 includes a base having a width of about 24 inches, and a height selected from a range of heights of about 42 inches to about 72 inches from the base to the top of the end member 106. The top of the end member 106 includes a channel indentation 62" having channel post 64" disposed therein for connecting of end connector member 66 thereto, for an end member 106 having a height of about the height of the barrier ends ~~54, 54'~~ 154, 154'. An inwardly oriented arcuate side 106' of the end member 106 includes a groove indentation 56 and groove 58 (see Fig. 17) configured to fit into the tongue protrusion 56 and the

groove 58 of either like-configured end ~~54, 54'~~ 154, 154' of the opposed, non-nested ends of a plurality of nested barriers ~~410~~ 130. An outer curved plate 108 is disposed along the outer curved portion 106" between an upper guide channel and a lower guide channel to ~~provided~~ provide a support to allow the respective upper cable 98 and a lower cable 98" to wrap around the outer curved plate 108 and the outer curved portion 106". The end member 106 provides an end connector that is highly visible for heights of about 46 inches to about 72 inches. The end member 106 also provides an additional reservoir for liquid or granular ballast when the interior of the end member 106 is filled with ballast upon positioning at the opposed, non-nested ends ~~54, 54'~~ 154, 154' of a plurality of end-to-end aligned and nested barriers ~~410~~ 130.

Please add the following new paragraph after paragraph [0026].

[0026.1] For the protective barriers illustrated in Figures 17 and 22, a means for guiding is needed to expedite positioning, guiding, and retaining upper and lower cables and/or a plurality of tubes inserted through the respecting upper and lower channels of each barrier 130 or 410 of a plurality of nested barriers being assembled along a roadway or a racetrack. The means for guiding includes a plurality of spring clips 440, 440', 440", 440''' composed of metal and bent to include a curvature matching the barrier side wall outer surface extending from the lower guide channel 138, the middle angled segment 140, the middle sloped segment 142, and the upper guide channel 144. Each spring clip 440 includes an upper clip body 442 positioned against a portion of middle sloped segment 142, and an angled lower clip body 442' positioned against a portion of middle angled segment 140. The spring clip 440 includes a width of about one and a half inches to about two inches, and includes a

back surface 448 having an adhesive pad 450 thereon, or includes a surface on which adhesive can be readily applied for retaining the back surface 448 against the barrier side wall outer surface. An upper clip segment 444 is curved to fit into and be retained within upper guide channel 144. The upper clip segment 444 includes an upper retainer spring 444' on which a tube and/or a tensioned cable can be positioned in preparation of inserting the tube and/or cable into upper clip segment 444 retained within the inwardly curved upper guide channel 144. A lower clip segment 446 includes a lower retainer spring 446' on which a tube and/or a tensioned cable can be positioned in preparation of inserting the tube and/or a tensioned cable into lower clip segment 446 retained within the inwardly curved lower guide channel 138 of a barrier 130 or 410. A plurality of spring clips 440, 440', 440", 440''' are spaced apart and vertically aligned along respective side walls to expedite guiding, and retaining upper and lower cables and/or a plurality of tubes inserted through the respecting upper and lower channels of each barrier 130 or 410 of a plurality of nested barriers. An additional use of one or more of the spring clips 440 includes positioning a spring clip 440 against the side surfaces of the connecting ends of barriers having side wall buttresses, when the barriers are coupled in end-to-end nesting relationship, to provide means for guiding upper and lower cables and/or a plurality of tubes inserted through each respective upper and lower channel of the barriers (see Figs. 13, 14, 16). At least two spring clips 440, 440' can be also positioned at appropriate heights on respective first and second end members 106, 106' on opposed ends of a plurality of nested like-configured barriers (see Fig. 20).

Please replace paragraph [0035] with the following amended paragraph.

[0035] An alternative embodiment of a protective barrier 410 is illustrated in Figure 22. An alternative method of manufacture includes a step of joining a flat side second wall 430 to a first side wall 432 having a plurality of non-vertical segments (see Fig. 22), along with a step of joining end-to-end two or more joined flat side second wall 430 and first side wall 432, and the steps of bonding identical ends 54, 54' to opposed ends of the joined side wall sections 430 and 432. The protective barrier 410 can be utilized at a racetrack to provide a "soft wall" section along portions of the restraining barrier wall of the racetrack. The flat side second wall 430 is positioned against the permanently installed restraining barrier wall, with the first side wall 432 protruding inwardly toward the rode surface. The first side wall 432 can include a plurality of spaced apart, vertically oriented buttresses, or can be utilized without buttresses (see Fig. 17). For an embodiment of the first side wall 432 lacking buttresses, and having an upper guide channel 434 and a lower guide channel 436, the channels are spaced apart, horizontally oriented and are each inwardly curved. A plurality of spring clips 440, 440', 440", 440''' are disposed in spaced apart orientation (see Fig. 17), in order to retain an upper tube 438 in upper guide channel 434, and a lower tube 438' in lower guide channel 436. Depending on the required level of impact resistance, each upper and lower guide channel 434, 436, with or without respective tubes 438, 438', can have an upper cable 98, and/or a lower cable 98" extended through the channels and retained therein during assembly of end-to-end aligned barriers by the plurality of springs clips 440 positioned along the first side wall 432. The protective barrier 410 provides an additional level of protection for the driver of the race vehicle by allowing the race vehicle, when traveling out of control at high speeds, to impact a "soft wall" that is designed to absorb energy and distribute the force of impact along the end-to-end joined side walls 432. Additional uses for the

protective barrier 410 include use as a single barrier unit or as a plurality of nested barriers aligned end-to-end along public roads that are temporarily utilized during race events. The protective barrier 410 can be positioned adjacent public landmarks and existing road barriers, and/or positioned for crowd control during along any racing event or parade event requiring enhanced crowd security.